

CASE

Hydraulic Excavator

Operating weight: 28,5 tons
Isuzu engine: 140,5 kW (188 hp)
Backhoe buckets: 475 to 1700 L

CX290



C O M M I T T E D T O Y O U R N E E D S



ENGINE

Latest generation engine, meeting future European standards (Tier II “low smoke emission” regulations applicable as of January 2003).

Make ISUZU
 Type CC-6BGIT
 Turbo Yes
 Injection electronically controlled
 No. of cylinders 6
 Bore - Stroke 105 x 125 mm
 Cubic capacity 6494 cm³
 EEC 80/1269 horsepower 140.5 kW - 188 hp
 Engine speed 2200 rpm

Automatic engine pre-heating provides for optimum and immediate operation as soon as the working temperature is reached, a guarantee of longer life for the engine and the hydraulic components.

The injection pump is directly, electronically controlled by a special calculator which takes the hydraulic system load parameters into account. Regulation is quicker and more efficient than on conventional systems, reducing smoke and noise emissions and also significantly reducing fuel consumption.



HYDRAULIC SYSTEM

Linked to the engine power management electronic system, a second electronic system manages all the hydraulic parameters so as to obtain the highest possible available hydraulic power, under optimum conditions of efficiency and economy.

The system consists of two axial piston, variable flow pumps.

Max output 2 x 221 l/min
 Max safety valve pressure
 Attachment / **Power Boost** 343/373 bar
 Upperstructure swing 294 bar
 Travel 343 bar

CONTROL VALVES

4 sections for: LH travel, boom, bucket, and dipper acceleration

5 sections for: RH travel, swing, dipper, auxiliary circuit and boom acceleration.

SWING

Axial piston, fixed flow motor

Max upperstructure swing speed 10,4 rpm

Hydraulic system gives priority to the swing when operated simultaneously with the dipper.

Hydrostatic swing brake backed up by mechanical brake during swing stopping and when machine is being transported. Hydrostatic upperstructure braking during working phases, with an “anti-bounce” valve stopping neatly and accurately over a truck body or trench.

Backhoe clamshell circuit operated by means of a manual control on the dipper.

Auxiliary circuit

Using the auxiliary section available as standard, a maximum number of different tools and assemblies can be used, to suit customer requirements (See options).

FILTRATION

Exceptionally fine protection of all hydraulic system components by means of the “**ULTRA CLEAN**” system (a special filter which removes all particles over 1 micron in size, as well as all traces of water condensation).

The use of this system means the hydraulic fluid retains all its qualities for **5000 hours**, thus reducing servicing intervals and maintenance costs. The hydraulic system is also equipped with an inlet filter, a return filter and a filter on the pilot circuit.



COOLING

Servicing of the cooling systems (engine and hydraulics) is considerably simplified due to total accessibility (hydraulic oil cooler radiator pivots).



TRAVEL

The travel circuit is equipped with two axial piston, variable flow motors.

Planetary reduction gear, automatic multi-disc brake.

Max travel speed..... 5.1 kph

Low travel speed..... 3.0 kph

Speed change is controlled from the instrument panel.

Gradeability..... 70% (35°)

ELECTRICAL SYSTEM

Circuit.....24 volts

Batteries2 x 12 v - 112 A/h

Circuit equipped with water-proof connectors

Alternator.....24 v - 50 A/h

UNDERCARRIAGE

Type “X” design, strongly built undercarriage provides for quick travel over all types of work-site and better stability when working or travelling under load.

Perfectly protected motors and piping, a guard underneath the hydraulic swivel, high ground clearance - for easy access to the most difficult work-sites.

Spring-type track tensioning, adjustable by an easily accessible grease cylinder.

Specifications (per track set):

Upper rollers 2

Lower rollers 8

Number of track pads 47

Type of shoes..... Triple grouser

Standard track pad width 600 mm

Chain guides Front and central



CAB

Combining comfort, safety and ergonomics, the CX290 cab has been designed to provide the best possible working conditions in a pleasant environment, thus enabling the operator to get the very best out of his machine.

Suspended cab (6 mounting points with rubber/fluid shock absorbing mountings).

Access to the operator's compartment is facilitated by a wide door and the fact that the LH control arm can be raised completely out of the way.

Exceptional cab width (1.00 metre) providing a spacious, airy working space.

Air suspension, ergonomic seat, with multiple adjustments as standard equipment.

The windscreen can be raised and locked in the upper or lower position.

The lower portion of the windscreen can be removed and placed in a storage compartment at the rear LH side of the cab.

The windscreen wiper is mounted on the RH cab pillar. The cab floor is flush with the door sill for easy cleaning. Self-regulating air conditioning, ventilation and defrosting of the cab by adjustable outlets (windscreen, operator, rear of cab).

Radio pre-equipment with loud-speaker housings.

Double sliding window on door.

Wide foot-rest on either side of the travel pedals and levers.

Optional pedal location (hammer, offset, etc.)



COMFORT - OPERATION - SAFETY

The safety console and the control panel are located to the right of the operator.

They include:

A large back-lit LCD screen, clearly displaying messages and indicators covering the vital functions of the machine - in a choice of 14 languages.

Touch controls for work mode, travel speed, automatic mode and emergency stop are provided.

There is also a touch control to select the attachment shock absorbing function: a soft or firm mode can be selected by the operator depending on the work being done.

“Clear language text and symbol” messages, plus an audible warning, enable the operator to check that his machine is operating correctly.

ENGINE RETURN TO IDLE

The engine return to idle can be automatic or manual as required by the operator (control on RH control lever).



ANTI-THEFT PROTECTION

An anti-theft system incorporated into the machine's electronic system is standard equipment.

WORK MODES

Hydraulic power is controlled by the electronic system, which provides a continuous link between the hydraulics and the engine.

The operator has a choice of 3 “**traditional**” modes, plus one “**automatic**” mode:

H mode (Heavy) uses all the machine's available power for tough jobs, providing optimum efficiency, high working speed and maximum force.

S mode (Standard) is the “traditional” working mode. It gives 90% of H mode performance (power and speed), and greater fuel economy.

L mode (Light) is the mode to be used for finishing work (sloping banks, profiles, etc), where precision is what is required. It's also the mode used when handling loads and travelling with loads, due to the reduced flow and the continuous availability of **Power Boost** (maximum pressure applied continuously).

For higher efficiency and maximum use of the machine's resources, certain functions have been simplified for the operator. This is the case for the Automatic Mode.

The **AUTO mode** on the new CX290 considerably simplifies machine operation, since it enables the

working mode to be changed automatically and continuously (without any action on the part of the operator), depending on the type of work being done. Over all the cycles performed, a real reduction in fuel consumption is found compared with continuous use in one single working mode.

AUTO POWERBOOST

To simplify the operator's work even further, enabling him to get the maximum performance from his machine, CASE uses a totally automatic powerboost. Regardless of the working mode, AUTO POWERBOOST on the CX290 cuts in whenever the machine encounters a difficult obstacle.

For a period of **8 seconds** the force at the dipper and bucket is increased by 8 to 10 %, totally automatically.



ATTACHMENT

For quick attachment changing, a hydraulic quick coupler is recommended. MULTI-FIT is the CASE hydraulic quick coupler which has a self-locking mechanical safety system (so the operator doesn't have to climb down from his cab).

This coupler can take buckets made by competing manufacturers, without modification, since it can accept varying centre distances (the clearance is automatically taken up).



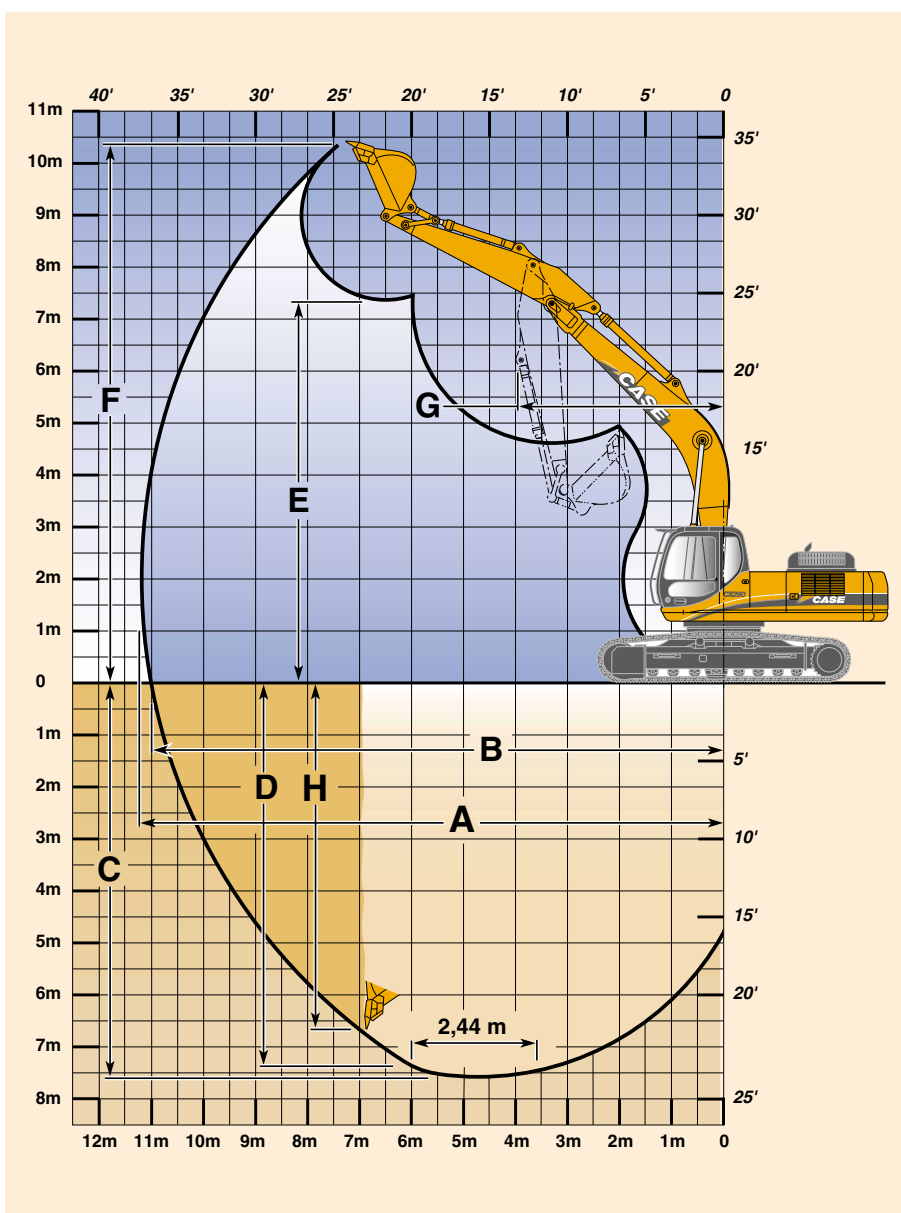
CIRCUIT AND COMPONENT CAPACITIES

Hydraulic reservoir	120 L
Hydraulic system.....	240 L
Travel reduction gear (per side).....	4.7 L
Swing reduction gear.....	6 L
Engine (including filter change)	24 L
Fuel tank.....	340 L
Cooling system.....	29 l





PERFORMANCE DATA



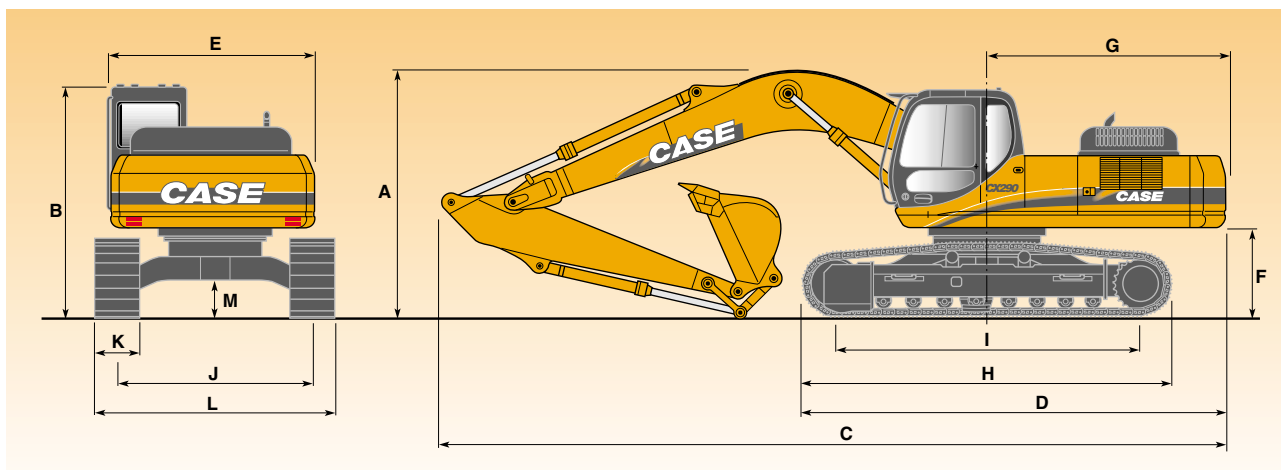
With 6.15 m monobloc boom

Dipper :

	2.65 m	3.20 m	3.65 m
A Maximum digging reach	10.30 m	10.70 m	11.20 m
B Maximum digging reach at ground levell	10.10 m	10.55 m	11.00 m
C Maximum digging depth	6.60 m	7.15 m	7.60 m
D Digging depth - 2.44 m (8') level bottom	6.40 m	6.95 m	7.45 m
E Maxi dump height	6.95 m	7.10 m	7.35 m
F Overall reach height	10.00 m	10.10 m	10.40 m
G Minimum swing radius	4.00 m	3.90 m	3.95 m
H Vertical straight wall dig depth	5.65 m	6.05 m	6.65 m
Digging force	-	12500 daN	-
Breakout force	17300 daN	17300 daN	17300 daN



GENERAL DIMENSIONS



	LC	NLC
A Overall height*	3.27 m	3.27 m
B Cab height	3.05 m	3.05 m
C Overall length*	10.41 m	10.41 m
D Overall length (wo/attachment)	5.62 m	5.62 m
E Width of upperstructure	2.79 m	2.75 m
F Upperstructure ground clearance	1.20 m	1.20 m
G Swing (rear end) radius	3.18 m	3.18 m
H Track overall length	4.88 m	4.87 m

	LC	NLC
I Centre/centre (idler to sprocket)	3.93 m	3.93 m
J Track gauge	2.60 m	2.39 m
K Track shoes width (std)	600 mm	600 mm
L Track overall width	Shoes 600 mm	3.20 m
	Shoes 700 mm	3.30 m
	Shoes 800 mm	3.40 m
M Ground clearance	0.49 m	0.49 m

* With 6.15 m monobloc boom - 3.20 m dipper and 1.1m³ bucket.



WEIGHT AND GROUND PRESSURE

With 6.15 m monobloc boom - 3.20 m dipper - 1.1 m ³ bucket - operator and full fuel tank		Weight (kg)		Ground pressure (bar)	
		LC	NLC	LC	NLC
Shoes 600 mm steel		28390	28390	0.54	0.54



BUCKETS

General purpose

SAE capacity	Litres	475	640	810	940	1060	1180	1300	1430	1550	1700
Width	mm	600	750	900	1000	1100	1200	1300	1400	1500	1600

Heavy duty

SAE capacity	Litres	475	640	810	940	1060	1180	1300	1430	1550	1700
Width	mm	600	750	900	1000	1100	1200	1300	1400	1500	1600

Heavy very duty

SAE capacity	Litres	1300		
Width	mm	1300		

Ditch with blade

SAE capacity	Litres	1010	1250	1210
Width	mm	2200	2200	2400

Other types of bucket on application.

Quarry

1550			
1500			

Ditch with teeth

1010	1250	1210	
2200	2200	2400	



LIFTING CAPACITY

With 6.15 m boom - 2.65 m dipper, 600 mm shoes and 1300 l bucket

Reach	3 m		4.50 m		6 m		7.50 m		9 m		maxi		3 m		4.50 m		6 m		7.50 m		9 m		maxi		Maxi reach	
Height	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	m	
7.50 m												4780*												4780*	6.60	
6 m						7130*	5230*	5060				4690*						7130*	6860	5230*	4630			4690*	4480	7.65
4.50 m				9810*		8010*	7100	7070*	4900			4840*	4120			9810*		8010*	6500	7070*	4480			4840*	3760	8.25
3 m				12340*	10350	9170*	6660	7330	4680			5200*	3730			12340*	9370	9170*	6060	7310	4260			5200*	3380	8.60
1.50 m				14290*	9560	10100	6250	7090	4460			5660	3560			14290*	8600	10080	5670	7070	4050			5650	3230	8.65
0		7060*		14950*	9190	9800	5980	6920	4310			5780	3610	7060*		14950*	8240	9770	5400	6900	3900			5770	3270	8.45
-1.50 m		12090*		14520*	9110	9670	5870	6850	4240			6300	3920	12090*		14520*	8160	9650	5300	6830	3830			6280	3540	7.95
-3 m		17850*		13120*	9210	9720	5910					7530	4670	17850*	16670	13120*	8260	9690	5330					7510	4220	7.10
-4.50 m		13680*		10370*	9490							8050*	6600	13680*		10370*	8540							8050*	5970	5.70
-6 m																										

With 6.15 m boom - 2.65 m dipper, 600 mm shoes and 1300 l bucket

With 6.15 m boom - 3.20 m dipper, 600 mm shoes and 1060 l bucket

Reach	3 m		4.50 m		6 m		7.50 m		9 m		maxi		3 m		4.50 m		6 m		7.50 m		9 m		maxi		Maxi reach
Height	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	m
7.50 m												3760*												3760*	7.15
6 m							5210*	5120				3690*							5220*	4730				3690*	8.15
4.50 m					7410*	7240	6630*	4980			3790*	3790					7410*	6640	6630*	4560			3790*	3450	8.75
3 m	15310*		11390*	10650	8650*	6780	7260*	4740	4250*	3470	4050*	3440	15310*	11390*	9660	8650*	6180	7260*	4320	4250*	3150	4050*	3120		9.05
1.50 m	6110*		13670*	9760	9840*	6330	7130	4500	5020*	3350	4510*	3290	6120*	13670*	8800	9840*	5750	7110	4080	5030*	3030	4510*	2980		9.10
0	7990*		14790*	9260	9840	6020	6920	4310			5270*	3320	7990*	14790*	8310	9820	5440	6910	3900			5270*	2990		8.90
-1.50 m	11420*		14770*	9080	9650	5850	6810	4210			5730	3550	11420*	14770*	8130	9630	5280	6790	3800			5720	3210		8.40
-3 m	15860*		13760*	9110	9640	5840	6820	4220			6670	4130	15860*	13760*	8160	9610	5260	6810	3810			6650	3730		7.60
-4.50 m	15830*		11550*	9320	8550*	5990					7890*	5500	15830*	11550*	8370	8550*	5410					7890*	4970		6.35
-6 m																									

With 6.15 m boom - 3.20 m dipper, 600 mm shoes and 1060 l bucket

With 6.15 m boom - 3.65 m dipper, 600 mm shoes and 940 l bucket

Reach	3 m		4.50 m		6 m		7.50 m		9 m		maxi		3 m		4.50 m		6 m		7.50 m		9 m		maxi		Maxi reach
Height	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	front	360°	m
7.50 m																									7.80
6 m																									8.70
4.50 m																									9.25
3 m	16410°		10470°		8120°	6860	6890°	4770	4990°	3480	3320°	3120	16410°	10470°	9890	8120°	6270	6890°	4350	4990°	3150	3320°	2820		9.55
1.50 m	7960°		12980°	9920	9410°	6390	7150	4510	5320	3330	3640°	2990	7960°	12980°	8940	9410°	5800	7130	4090	5300	3010	3640°	2690		9.60
0	8030°		14470°	9300	9850	6020	6910	4290	5190	3220	4160°	3000	8030°	14470°	8340	9830	5440	6890	3880	5180	2900	4160°	2700		9.40
-1.50 m	10560°		14800°	9030	9610	5810	6760	4160			5050°	3180	10560°	14800°	8080	9590	5230	6740	3750			5050°	2860		8.95
-3 m	14230°		14120°	8990	9550	5750	6730	4130			5890	3630	14230°	14120°	8050	9520	5180	6710	3720			5880	3270		8.20
-4.50 m	17370°		12330°	9140	9150°	5840					7350°	4620	17370°	16540	12330°	8200	9150°	5270			7350°	4170		7.05	
-6 m	12010°		8760°								7320°		12010°	8760°	8570						7320°	6760		5.25	

- Machine in -LIGHT- mode

- Lift capacities are taken in accordance with SAE J 1097 / ISO 10567 / DIN 15019-2.

- Lift capacities shown in kg do not exceed 75% of the tipping load or 87% of the hydraulic lift capacity.

- Capacities that are marked with an asterisk are hydraulic limited

- If the machine is equipped with a quick coupler, subtract the weight of the quick coupler from the load shown in the tables to calculate the real lifting capacity.

STANDARD EQUIPMENT

Hydraulic control

- 4 working modes (3 manual + 1 auto)
- 2 travel speeds with automatic speed change
- Swing brake control
- Load-holding valves on boom and dipper
- Power control - automatic powerboost
- Hydraulic control lever locking, lever position adjustment
- Auxiliary circuit control valve section
- High performance "Ultra Clean" filtration system (1 µ)

Engine control

- Engines to Tier II standard
- Calculator on injection pump
- Automatic / manual engine return to idle
- Fuel level check
- Emergency stop
- Automatic engine pre-heating

System Monitor, with 14 language display

- Messages (Function, safety, etc.)
- Working modes (H-S-L and auto)
- Operating modes (travel mode, swing locking, etc.)
- Audible warning device
- Digital clock
- Water temperature
- Hydraulic oil temperature
- Diagnostic system

Electrical system

- Leak-proof connectors
- Double horn

Lighting

- 1 working light on the fuel tank
- 1 working light on the boom
- 1 working light on the cab

Operator environment

- Modern cab, 1 metre wide
- Safety glass
- Suspended cab (6 mounting points with rubber/fluid shock absorbing mountings)
- Windscreen with lockable opening
- "LCD" display
- Water and dust-proof membrane type touch controls
- Windscreen washer and wiper
- Adjustable heater
- Floor mat
- Sun-visor
- Rear-view mirror and safety mirrors
- Self-adjusting air conditioning
- Anti-theft device

Operator seat

- Air suspension
- Height and tilt adjustment
- Adjustable head-rest
- Adjustable seat-back angle
- Adjustable arm-rests
- Reel-type safety belt

OPTIONS

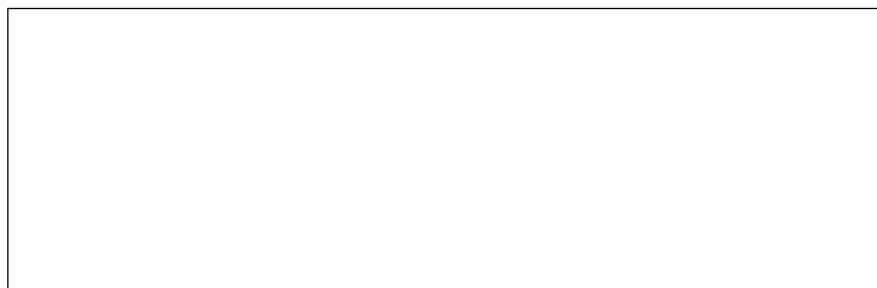
- Auxiliary hydraulic circuit
Possible options and combinations:
 - Hammer circuit with pedal control
 - 2nd auxiliary circuit for clamshell rotation, etc.
 - Dual-acting circuit (shears type)
 - Multi-purpose circuit (hammer or shears)
 - Multi-purpose circuit + 2nd circuit
- MULTI-FIT quick coupler

Standard and optional equipment can vary from country to country

Conforms to directive 98/37/CE



NOTE: Standard and optional attachments and equipment may vary according to requirements and regulations from country to country. The photos given may show non standard or unmentioned items. Furthermore CNH reserves its right to modify specifications of its machines without prior warning, without incurring any obligation whatsoever that might result from such modifications.



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